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Strategic capital review

Report of the Secretary-General

Summary

The present report is submitted pursuant to section V of General Assembly resolution 68/247 B relating to the initiative for global property management of the United Nations Secretariat, referred to as the strategic capital review.

The report summarizes the progress made since the issuance of the previous report of the Secretary-General (A/68/733) and includes a summary of the findings and conclusions of the second and third phases of the review.

The strategic capital review has generated a 20-year capital maintenance programme for the period 2018-2037. The Secretary-General proposes to use the results of the review to develop a long-term capital maintenance programme by maintaining and updating the 20-year capital maintenance programme continuously, at appropriate intervals.

The review aims to more accurately project capital maintenance requirements in order to provide the General Assembly with a tool to consider these requirements well in advance. In addition, in the review it is proposed to reduce overall capital requirements by employing a life-cycle approach to managing real estate. The approach entails the provision of systematic, planned capital improvements gradually over time, in contrast to the current reactive approach. The proposed approach would enable the Organization to avoid what would otherwise be larger, and higher-cost projects.

It is recommended that the General Assembly take note of the report, including the preliminary planned projects for the biennium 2018-2019, and that it request the Secretary-General to report to the Assembly on the long-term capital maintenance programme (2018-2037) at the first part of its resumed seventieth session.

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Glossary

Asset recapitalization

Major alteration, improvement, renovation, modernization, reconstruction or replacement activities needed to keep existing facilities modern, operational and code-compliant. Recapitalization extends the useful life of existing facilities or restores lost useful life.

Building assets (components)

Owing to the complex nature of building construction, as well as the size of a building in terms of both area and value, building assets are divided into components used to describe various parts that comprise the building, such as the exterior, roof, interior and services.

Capital maintenance programme

A long-range plan that identifies capital projects required to improve, modernize and repair an organization's real estate portfolio, providing a planning schedule and identifying options for financing the planned works.

Compound

An enclosed area containing multiple buildings or facilities.

Condition assessment

An evaluation of building and infrastructure components to assess their current physical state and usability at a given point in time.

Depreciated replacement cost

A method used in financial reporting to arrive at an equivalent for the market value of assets which are specialized and limited in the market, for which comparable market evidence is unavailable. The depreciated replacement cost methodology determines value by subtracting depreciation (in the form of physical deterioration, functional obsolescence and economic obsolescence) from replacement cost.

Facility

A building or set of buildings and infrastructure assets that is built for a specific purpose, such as a conference or office facility.

Gross external area

The area of the building footprint measured using all relevant coordinates on the external walls of a building.

Gross replacement cost

The cost to replace the asset with a functionally equivalent asset.

Infrastructure assets (components)

Physical elements of a compound that are not part of the building assets, are external to buildings, but are located within the confines of a compound, such as car parks, roads, pathways, perimeter fencing, intruder detection systems, telecommunication systems, waste management systems, recreation areas, energy systems, protection systems, transportation items, water management systems and landscaping.

Leasehold improvements

An alteration made to a leased premise in order to customize or upgrade it for the specific needs of an organization. In some cases a landlord provides the tenant with an allowance to make leasehold improvements.

Life-cycle replacement assessment

Studies carried out to establish the planned replacement of assets in accordance with their expected useful life in order to optimize the operation of the assets and extend their useful life.

Life-cycle replacement methodology

This methodology is used as a guide to analyse the life-cycle planning of assets based on systematic maintenance programmes and associated costs, risks and benefits for establishing business cases over the entire life of the assets.

Maintenance reinvestment rate

The ratio of total annual capital expenditure measured against the asset's total gross replacement value.

Peak recapitalization wave/expenditure

A period of heavy capital expenditure towards assets/sub-components that are reaching the end of their useful lives.

Premises

A building or part of a building, usually with its appurtenances (such as grounds), in which the organization operates. Does not entail ownership rights, but describes a physical place.

Property

A parcel of land, building or infrastructure asset owned, operated and maintained by the organization. The term "asset" may also be used to describe property.

Real estate portfolio

An aggregation of the real property (immovable property that has been legally defined and to which improvements have been made) owned and/or in use by an organization for its own operational purposes.

Remaining useful life

Expected remaining life of a building or building component, based on the age and condition of the building or component. Remaining useful life can be extended as a result of capital improvements.

Types of leases

Commercial leases: leases with a lease term less than or equal to 35 years entered into for the rental of property between an organization and a landlord for business or commercial use only without conveying the rights of ownership of the property to the lease.

Donated "right-to-use" leases: associated agreements in which a third-party entity provides donated properties for use by an organization at no cost.

I. Introduction

1. In accordance with section V of General Assembly resolution 68/247 B, the Secretary-General presents herewith his report on progress made on the strategic capital review since the issuance of his previous report on the subject (A/68/733). The report contains the findings and conclusions of the review, including the 20-year capital maintenance programme, which projects a sequence of capital maintenance activities over a 20-year period from 2018 to 2037. The report identifies anticipated capital projects, based on assessments of existing conditions and life-cycle replacement analyses and presents a case for incremental recapitalization of all building and infrastructure assets of the United Nations Secretariat.

2. In his previous report, the Secretary-General set out the key objectives of the review, the first of which was to provide safe and healthy working environments for United Nations delegates, visitors and staff over the long term. Key objectives also included compliance with the Convention on the Rights of Persons with Disabilities, maintaining property value, maximizing space usage efficiency in existing spaces, modernizing building systems, moving towards more energy-efficient facilities, preserving heritage assets and minimizing work disruption.

3. With a view to developing a long-term capital maintenance programme, the Secretary-General intends to maintain the 20-year capital maintenance programme on a rolling basis by updating it at appropriate intervals. As indicated in the report, the programme involves a collaborative approach between Headquarters and duty stations. The report explains the governance structure of the long-term capital maintenance programme, including roles and responsibilities and the coordination procedures with the offices away from Headquarters and regional commissions.

4. The review covers eight locations (New York, Geneva, Vienna, Nairobi, Addis Ababa, Bangkok, Beirut, and Santiago), as well as 20 subregional commission locations. The total number of buildings at the these locations is 103 owned and 51 leased. With regard to the owned buildings, the gross replacement value is $3.644 billion, the depreciated replacement value is $2.097 billion, the total built area is 1,041,182 m^2 and the average building age is 25 years. Annex I contains a further breakdown of each of the eight locations.

Coordination and linkages with other organizational initiatives

5. The review is being coordinated by the Overseas Properties Management Unit in the Facilities and Commercial Services Division of the Office of Central Support Services, taking into account other organizational initiatives, including the adoption of the International Public Sector Accounting Standards (IPSAS), the implementation of Umoja and ongoing capital projects being undertaken by the Organization.

6. With the adoption of IPSAS, the Organization is moving from a cash basis to an accrual accounting system. Five asset classes that are valued under IPSAS are considered in the present report. These include: (a) buildings; (b) infrastructure assets; (c) machinery and equipment; (d) furniture and fixtures; and (e) leasehold improvements. These assets are valued according to cost or fair value and depreciated over time according to their useful lives. Owing to their complexity and high value, buildings and infrastructure assets are further divided into components, which depreciate at varying rates. The varying depreciation schedules are a key

factor in developing a proactive life-cycle approach to managing real estate by reinvesting in existing assets at planned intervals.

7. With the implementation of Umoja, the Organization will have immediate access and control over a more accurate data set with respect to the assets listed in paragraph 6. With the recent launch of the Umoja real estate module, key information regarding buildings owned and operated by the Organization is recorded in detail, including the location, size and age of buildings. In addition, the Umoja project systems and fixed asset modules will be used to manage capital projects so that project costs may be linked directly to increases in property values. As process owner for the real estate and fixed asset modules, the Office of Central Support Services has been working closely with the Umoja project team to ensure that Umoja has been developed to fully support the business processes of the Organization, including the strategic capital review.

8. Ongoing capital projects, including the strategic heritage plan in Geneva, the new facility for the International Residual Mechanism for Criminal Tribunals in Arusha, United Republic of Tanzania, the blast mitigation project at the Economic and Social Commission for Western Asia in Beirut and the renovation of Africa Hall at the Economic Commission for Africa in Addis Ababa, are referred to in the present report. However, these projects were all developed prior to the completion of the strategic capital review.

9. Proposals for a new global service delivery model will be submitted for consideration by the General Assembly at the main part of its seventieth session. As such, the global service delivery model has not been included as a specific driver in the present report.

10. The Office of Central Support Services has implemented a pilot project at United Nations Headquarters in New York based on which a business case has been developed for the potential adoption of flexible workplace strategies. The report of the Secretary-General on the comprehensive business case for the application of flexible workplace strategies at the United Nations (A/69/749) has been submitted to the General Assembly for its consideration at the first part of its resumed sixty-ninth session. The impact of this initiative on long-term accommodation at Headquarters is significant, as it presents the opportunity to reduce leasehold obligations. However, in contrast to New York and Geneva, the other duty station locations do not have significant leasehold obligations. The impact at those duty stations is therefore much less significant in terms of financial savings.

11. Although specific targets for space usage efficiency gains are not included in the 20-year capital maintenance programme as part of the strategic capital review, space usage efficiency is one of the key objectives of the review. The lessons learned from the pilot project at Headquarters are being shared with offices away from Headquarters and regional commissions. In addition, in accordance with the request by the General Assembly, consideration of flexible workplace strategies is being included in capital projects undertaken by the Organization, including the strategic heritage plan.

II. Governance structure for the management of United Nations properties

12. In line with the Secretary-General's bulletin on the organization of the Office of Central Support Services (ST/SGB/2013/1), the Office provides support and coordination to offices away from Headquarters and regional commissions in the management of their properties and constructions.

13. The strategic capital review is being coordinated by the Overseas Properties Management Unit under the overall leadership of the Assistant Secretary-General for Central Support Services.

14. Day-to-day coordination is conducted between the Overseas Properties Management Unit and the facilities managers at offices away from Headquarters and regional commissions, with support from an architectural planning consultancy firm, which provides offices away from Headquarters and regional commissions with detailed technical advice as required. The Overseas Properties Management Unit ensures that the projects developed by local teams are in conformity with the overall objectives of the review and that preliminary project cost estimates and timelines are developed according to a consistent methodology.

15. The Assistant Secretary-General for Central Support Services and the Directors of Administration of the offices away from Headquarters and regional commissions have met via videoconference at key intervals, and particularly during phase 3 of the project, during which the initial 20-year plan was produced. Engagement will continue in this manner as future iterations of the capital maintenance programme are developed.

III. Progress made since the previous report

A. Recapitulation of phase 1 activities

16. As previously reported, in phase 1, a framework and work methodology for the capital maintenance programme review for offices away from Headquarters and regional commissions was established, the key organizational objectives for the capital improvements were agreed to and a risk analysis and prioritization methodology for assessing projects based on the key organizational objectives was developed. As previously reported (see A/68/733), those objectives formed the basis for establishing the guidelines and benchmarks to ensure a consistent approach to collecting and reviewing information on building infrastructure and policies relating to facilities management in phase 2.

B. Phase 2 activities

17. Phase 2 began in May 2012 was completed on 31 October 2014. This phase entailed data collection at the offices away from Headquarters and regional commissions where the premises are fully owned by the United Nations (in Addis Ababa, Bangkok, Nairobi and Santiago). Those offices undertook the condition, operational and life-cycle replacement assessments in accordance with the guidelines. The result was a complete facilities assessment similar to those that had

been performed in New York leading to the capital master plan and in Geneva leading to the strategic heritage plan.

18. The assessments included a detailed review of the physical and operational characteristics of the facilities, such as architecture, structure, electromechanical services, utilities, energy efficiency, fire protection, life safety, accessibility, heritage, functionality, space utilization, maintenance and security measures. That review process will serve as a benchmark for the systematic and periodic conduct of assessments to maintain accurate facilities data globally for the Organization.

19. As the offices away from Headquarters and regional commissions proceeded to phase 2, the works at Headquarters focused on linking property value with targeted capital investment. This included comparisons of best practices with other organizations, agencies, funds and programmes that participate in the Interagency Network of Facilities Managers and have engaged in or are planning significant capital investments to their properties.

20. During this phase, it should be noted that the interim Property Management Unit at Headquarters separately continued its close coordination with the substantive offices involved in the implementation of IPSAS and Umoja, as set out in the report of the Secretary-General on strengthening property management at the United Nations Secretariat (A/69/400), focusing in particular on the recordings related to the inventory of real estate assets and the future format for planning and recording capital projects in Umoja. This is particularly important given the requirement for property values to continue to be reported in the financial statements of the Organization, and hence for capital improvements to be updated and recorded accurately.

C. Phase 3 activities

21. During phase 3, which began in November 2014, the lead external consultant engaged by the Overseas Property Management Unit at Headquarters, in conjunction with the Unit, analysed the data provided by the offices away from Headquarters and regional commissions, provided feedback and summarized the overall 20-year capital maintenance programme, based on the methodology established in phase 1.

22. In parallel, the Overseas Property Management Unit coordinated a life-cycle replacement analysis of the renovation at Headquarters following the capital master plan. The Unit also advised the United Nations Office at Geneva on a similar exercise related to the facilities not included in the strategic heritage plan, such as villas, annex buildings and infrastructure (roads, gardens, etc.), as well as on a life-cycle replacement programme modelled on that of Headquarters that would commence at the completion of the strategic heritage plan. These exercises and costs have all been taken into consideration and included in the strategic capital review.

D. Development of a long-term capital maintenance programme

23. The long-term capital maintenance programme is envisioned as a rolling plan. It is important that the programme be maintained and updated periodically, adjusting to

new challenges, organizational objectives and other developments. This tool will then become the framework for planning and developing future capital improvements.

24. Although the initial outcome of the strategic capital review is the establishment of the long-term capital maintenance programme based on a comprehensive analysis of the near-term and long-term capital projects, it is clear that the level of capital improvements necessary in order to move away from the Organization's current reactive approach to capital maintenance is significantly higher than the current level of provisions for alterations and major maintenance under the programme budget.

IV. Findings of phase 2: data collection and analysis

25. The phase 2 exercise has revealed that capital improvements are necessary in the near term to address urgent remedial needs and in the long term based on a life-cycle replacement methodology. The life-cycle replacement methodology is particularly applicable to Headquarters following the capital master plan, will be applicable to Geneva following the strategic heritage plan and will be similarly applicable to Nairobi and the regional commissions once the anticipated capital projects necessary for health, safety and security reasons have been completed. The following is a summary of the anticipated projects required, by location.

A. Headquarters

26. The capital maintenance programme at Headquarters mainly comprises a planned life-cycle replacement of building components and infrastructure assets following the completion of the capital master plan. In accordance with the target approach outlined in the previous report of the Secretary-General (A/68/733), the programme aims to provide maintenance for at least half of the total useful life of the buildings. The life-cycle replacement is planned as follows:

(a) For the exterior of the buildings (foundations and basements, superstructure and exterior enclosure) the required capital expenditure would be relatively minor compared to the total value and would entail continuous repairs to masonry and glass walls to maintain half of the useful life of the building;

(b) For roofing, the required capital expenditure for repairs and replacement is anticipated to be twice the initial cost over the useful life of the building in order to keep the buildings watertight;

(c) For the interior offices, public spaces and building services (such as elevators and escalators and heating, cooling, electrical, plumbing and fire protection systems) the capital expenditure required for repairs or replacement is also expected to be twice the initial cost over the useful life of the building. However, with some interior and service elements such as carpeting, ceilings, lighting, electrical and low-voltage systems (security, congress, simultaneous interpretation and audiovisual systems) with shorter useful lives, a replacement is planned more often.

B. United Nations Office at Geneva

27. Capital maintenance requirements for those buildings that are out of scope of the strategic heritage plan (such as the villas and annexes) are included in the review and, based on the state of repairs required, will also be considered in the context of the proposed programme budget beginning in the biennium 2016-2017.

28. Life-cycle maintenance requirements following the completion of the strategic heritage plan are included in the review, as has been done for the long-term capital maintenance requirements following the completion of the capital master plan at Headquarters.

C. Vienna International Centre

29. The Government of Austria provides the use of the Vienna International Centre to the Vienna-based organizations[1] on a 99 year lease for €0.07 per annum. Major maintenance and alterations of the premises are managed on a cost-shared basis through the Common Fund for Financing Major Repairs and Replacements. The Government of Austria contributes 50 per cent to the Fund and the Vienna-based organizations the remaining 50 per cent. Main elements of repair and maintenance work to be financed by the Fund are defined by a Joint Committee which administers the Fund. The budget is based on a five-year forecast of needs. To date, there are no plans to replace any of the current buildings. Instead, the philosophy of the Fund is to prolong the useful life of the premises indefinitely through regularly scheduled maintenance.

30. In case of unexpected major repairs and replacements, which are not included in the agreed investment plan, the parties consult with each other with a view to determining the amount to be spent to cover any cost that exceeds the money available in the Fund. The additional cost is shared equally among the host Government and the Vienna-based Organizations.

31. The current yearly contributions of the Government of Austria and the Vienna-based organizations is €2,114,800 each, based on projected financial requirements of approximately €21,148,000 for the five-year period from 2012 to 2016. The United Nations Office at Vienna currently contributes 22.67 per cent of the total requirements for the Vienna International Centre. The respective share of each of the four organizations in the costs is determined on the basis of a calculation of the space usage, staff and workload level of each of the organizations.

32. It is expected that the five-year budget for 2017-2021 will remain in the same range; however, this will be finalized at the end of 2015. For planning purposes, the contribution of the United Nations Office at Vienna to the Fund is based on requirements for the period 2012-2016, which are projected out for 20 years.

[1] The Vienna-based organizations are the United Nations Office at Vienna, International Atomic Energy Agency, United Nations Industrial Development Organization and the Comprehensive Test Ban Treaty Organization.

D. United Nations Office at Nairobi

33. The key projects identified for the United Nations Office at Nairobi are related primarily to health and safety, but also to modernization and programmatic objectives, and take into account life-cycle replacement needs, as set out in the paragraphs below.

34. Replacement of prefabricated blocks A to J is required given that the blocks, now 40 years old, have already exceeded their useful life. Benefits of the proposed replacement of the blocks are that they will be: (a) able to accommodate an increased number of staff on the compound by using a more modern, flexible and efficient work space environment; (b) able to comply with all local and international regulations, in particular those related to fire safety; (c) in compliance with international regulations for persons with disabilities; and (d) more energy efficient through the use of sustainable strategies, such as solar panel installation and building orientation to avoid solar heat gain. The project is proposed to be phased, thereby minimizing the need for swing space.

35. In addition to the replacement of the existing office space, the project would include building of centralized contractor facilities and workshops, official vehicle maintenance and parking facilities, additional staff parking, a cafeteria and consolidated stores, and an up-to-date primary data centre.

36. It is also proposed to implement compound-wide infrastructure upgrades in order to address existing health and safety issues and non-compliance with local and international regulations and to achieve better energy efficiency and compliance with accessibility standards when performing renovation works. These upgrades include adding fire detection, fire extinguishers, fire alarms, emergency lighting and directing signage; improving electrical supply, generator backup and electromechanical distribution to meet long-term energy efficiency goals; renovating the sewage treatment plant; and revamping the water distribution system.

37. Other buildings and interiors are to be upgraded based on a proposed life-cycle maintenance programme. These include the conference facilities, temporary rooftop conference rooms, the office blocks M to K, the recreation center, the commissary and the new office facility. This will be carried out in a phased manner and will include upgrading of toilet facilities, food service, electrical and mechanical systems, and roofs, modernizing interior spaces, increasing multi-functional usage, resolving the issue of interpretation booths that do not comply with standards of the International Organization for Standardization, and updating information technology and audiovisual equipment.

38. In addition, a multi-storey car park is proposed to increase parking capacity and improve vehicular circulation within the compound.

E. Economic and Social Commission for Asia and the Pacific

39. The projects proposed at the Economic and Social Commission for Asia and the Pacific relate primarily to health and safety, but also to the life-cycle replacement works that would be most economical to perform in conjunction with required seismic mitigation measures.

40. A seismic mitigation project is proposed for the secretariat and service buildings, as these were built in 1975 and do not meet the current seismic codes.

41. The project includes mitigation of the structural deficiencies to guard against future potential seismic incidents, repair of the exterior building façade and replacement of the outdated glazing for better energy efficiency, as well as required roof replacement. In addition, the interior office spaces would be modernized to allow for more efficient space utilization. The project would also include renovation of toilet facilities and replacement of mechanical and electrical distribution systems. Low-voltage electrical system and information technology infrastructure upgrades are based on the life-cycle replacements that are the most cost effective to perform when the floors are unoccupied, and would take advantage of the completion of the project in phases by groups of floors, as the most cost-effective approach.

42. As to other works, such as the proposed conference centre projects, these would be phased over the initial 20-year capital maintenance programme based on a life-cycle maintenance strategy and would include repair of structural deficiencies, office space and architectural upgrades, roof repairs, kitchen upgrades and upgrades of water, plumbing, mechanical and electrical systems, as well as additional low voltage and information technology infrastructure upgrades.

43. General compound infrastructure projects would focus on accessibility for persons with disabilities, security access and structural codes and standards.

F. Economic Commission for Latin America and the Caribbean

44. As the recent earthquake resulted in a major emergency renovation to the main building of the Economic Commission for Latin America and the Caribbean, the proposed near-term projects for the Commission are based on those works not included in the emergency repairs already undertaken. The residual projects captured as part of the review are based on those near-term projects, starting with health and safety, modernization and operational considerations, and taking life-cycle replacement into consideration.

45. The North Building project includes renovating conference rooms, adding a fire suppression system, upgrading heating and cooling air handling systems, replacing the sewage system and installing new sewage treatment plants, upgrading bathrooms, upgrading electrical systems, providing access for persons with disabilities and implementing energy efficiency initiatives.

46. Other proposed long-term life-cycle maintenance projects for the main building, the Clades Building and the printing building include projects to remodel conference rooms, basements and office spaces, add fire suppression systems, upgrade mechanical and electrical systems, replace elevators, remodel staircases, build a new water supply well to ensure independent access to water, replace the sewage system and install a new treatment plant, perform structural works on the bridges and towers, replace the building facade, maintain roofing systems, replace interior partitions, refurbish toilet facilities, provide access for persons with disabilities and implement energy efficiency initiatives.

G. Economic Commission for Africa

47. The projects at the Economic Commission for Africa are based primarily on health and safety requirements, but also on modernization and operational considerations, taking into consideration near-term projects required owing to the current state of the buildings, as well as longer-term projects to meet life-cycle maintenance requirements.

48. The renovation of Africa Hall was developed as a stand-alone project prior to the issuance of the present report, and is therefore not included in the 20-year capital maintenance programme as part of the review.

49. To address health and safety concerns, the proposed old office building project entails structural upgrades to mitigate seismic threats, compliance with codes related to fire safety and egress, as well as accessibility for persons with disabilities, modernization of the interior to achieve greater efficiency, and upgrades to the exterior and to mechanical and electrical systems based on life-cycle replacement, as the building is more than 50 years old.

50. The proposed renovation of the library and cafeteria would address health, safety, modernization and operational concerns. The renovation would include structural reinforcement, remodelling of the kitchen, upgrades to the facades, interiors and elevators, energy efficiency initiatives, replacement of water pipelines, upgrade of the mechanical and electrical systems and renovation of the sewage system.

51. Additional works are proposed over the initial 20-year plan that relate to the life-cycle maintenance programme for the extension office building, conference centre, general compound infrastructure and the new office facility.

H. Economic and Social Commission for Western Asia

52. The requirements for the Economic and Social Commission for Western Asia are not included in the review, as it has been determined that owing to security concerns, the Organization will not invest long-term in the existing building, which is owned and maintained by the host Government. As reported in document A/68/748, the United Nations is implementing interim security threat mitigation measures in the building, namely replacement of blast window film and installation of a facade cable catch system.

I. International Residual Mechanism for Criminal Tribunals

53. The Office of Central Support Services provides technical guidance, advice and support for construction of the new facility for the International Residual Mechanism for Criminal Tribunals. However, beyond the initial construction, it has yet to be determined whether the framework established by the strategic capital review will be used to forecast capital requirements for the new facility after it is completed. Future developments in this regard will be included in future reports on the strategic capital review.

J. Treatment of non-owned properties

54. Several premises in which the Organization operates are not owned by the Organization. These may either be donated by a Member State on a right-to-use basis, or leased on a commercial basis. Irrespective of ownership, the Organization is responsible for capital planning at these locations to varying degrees. In most cases, such as at the headquarters of the Economic and Social Commission for Western Asia, the Organization is not responsible for major maintenance of building systems.

55. However, in leased spaces, the Organization is responsible for other types of capital expenses, referred to as leasehold improvements. These include, for example, repartitioning and refurnishing interior office environments in accordance with business reorganizations or other planning requirements. Such requirements have been included in the review.

56. Following the guidance received by the General Assembly in its resolution 247 B, the Secretariat has studied the feasibility of including additional duty stations not included in the previous report in the strategic capital review. A total of 20 subregional offices of the regional commissions, which are all in leased premises, have been included in the present report. Depending on the terms of the leases, the Organization is responsible for major maintenance and/or leasehold improvements at these locations. These capital requirements have been included in the review.

V. Findings of phase 3: development of the 20-year capital maintenance programme

A. Twenty-year capital maintenance programme (2018-2037)

57. A summary overview of the initial 20-year capital maintenance programme over the next ten bienniums, beginning in the biennium 2018-2019 and extending through the biennium 2036-2037, is provided in tables 1 and 2. In table 1, the total 20-year capital maintenance requirements are presented on a biennial basis. The related maintenance reinvestment rate is also shown. This rate is calculated on the basis of the average annual capital maintenance requirements as a percentage of the current gross replacement cost ($3,644,602,252) for the portfolio of assets under review.

Table 1
Capital maintenance requirements per biennium

Biennium	*Capital maintenance requirements (United States dollars)*	*Annual maintenance reinvestment rate (percentage)*
	(a)	*[(a) ÷ 3,644,602,252] x 0.5*
2018-2019	109 162 825	1.50
2020-2021	121 048 620	1.66
2022-2023	101 310 032	1.39
2024-2025	110 926 758	1.52
2026-2027	116 328 114	1.60
2028-2029	105 088 981	1.44

Biennium	*Capital maintenance requirements (United States dollars)*	*Annual maintenance reinvestment rate (percentage)*
	(a)	*((a) / 3,644,602,252) x 0.5*
2030-2031	114 534 429	1.57
2032-2033	122 743 020	1.68
2034-2035	199 777 147	2.74
2036-2037	224 651 686	3.08
Total	**1 325 571 612**	–

58. In table 1, the total capital maintenance requirements are stated inclusive of facilities-related requirements, related buildings, infrastructure assets, equipment and furniture. Those security and information technology requirements currently provided for under section 33, Construction, alteration, improvement and major maintenance, of the programme budget, are not included.

Table 2
Capital maintenance requirements and maintenance reinvestment rate by duty station

Duty station	*Capital maintenance requirements, 2018 to 2037 (United States dollars)*	*Gross replacement cost (United States dollars)*	*Annual maintenance reinvestment rate based on gross replacement cost (percentage)*	*Depreciated replacement cost (United States dollars)*	*Annual maintenance reinvestment rate based on depreciated replacement cost (percentage)*
	(a)	*(b)*	*((a) / (b)) x 0.05*	*(c)*	*((a) / (c)) x 0.05*
United Nations Headquarters	540 655 105	1 801 241 214	1.50	1 499 070 869	1.80
United Nations Office at Geneva	215 987 362	961 326 465	1.12	186 882 256	5.78
Economic Commission for Africa	166 750 864	313 312 678	2.66	138 846 004	6.00
United Nations Office at Nairobi	257 484 889	152 308 535	8.45	90 992 062	14.15
Economic and Social Commission for Asia and the Pacific	78 699 131	140 200 487	2.81	75 306 741	5.23
Economic Commission for Latin America and the Caribbean	34 919 931	54 231 142	3.22	17 757 695	9.83
United Nations Office at Vienna	31 074 330	221 357 350	0.70	87 994 180	1.77
Economic and Social Commission for Western Asia	–	624 381	–	586 124	n/a
Total	**1 325 571 612**	**3 644 602 252**	**1.82**	**2 097 435 931**	**3.16**

59. In table 2 above, the total capital maintenance requirements by duty station reflect the projected requirements over the 20-year period. The property portfolio at each duty station is valued on two bases: gross replacement cost and depreciated replacement cost. Gross replacement cost is defined as the cost to rebuild/replace the property as new, whereas the depreciated replacement cost is the depreciated value (see para. 64).

B. Near-term capital expenditure and other projects

60. Figure I provides a summary of the projects identified for implementation within the first 10 years of the 20-year review. Sections 1 to 3 of the figure show projects that have already been submitted to the General Assembly and are either already under way or currently under consideration.

61. Section 4 of the figure shows the anticipated projects in Addis Ababa, Bangkok, Nairobi and Santiago. The projects are listed under headings that represent the primary objective for a given project, including life safety, modernization and maintenance of property value, and programmatic objectives. Although a project may have more than one benefit or objective, for the purpose of this planning exercise, projects are considered to have a single primary objective, as listed below:

(a) Life safety: to meet industry norms related to health and safety issues, including earthquake (structural) remediation and fire safety:

(i) Structural and life safety remediation of the secretariat tower at the Economic and Social Commission for Asia and the Pacific;

(ii) Structural and life safety remediation of the old office building tower at the Economic Commission for Africa;

(b) Modernization and maintenance of property value: to modernize outdated major building systems in order to meet industry norms and to replace buildings according to a life-cycle approach in order to maintain property value:

(i) Replacement of old office blocks (blocks A to J) at the United Nations Office at Nairobi;

(ii) Replacement of site infrastructure at the United Nations Office at Nairobi;

(iii) Renovation of the north building at the Economic Commission for Latin America and the Caribbean;

(c) Programmatic objectives: to respond to changing client needs:

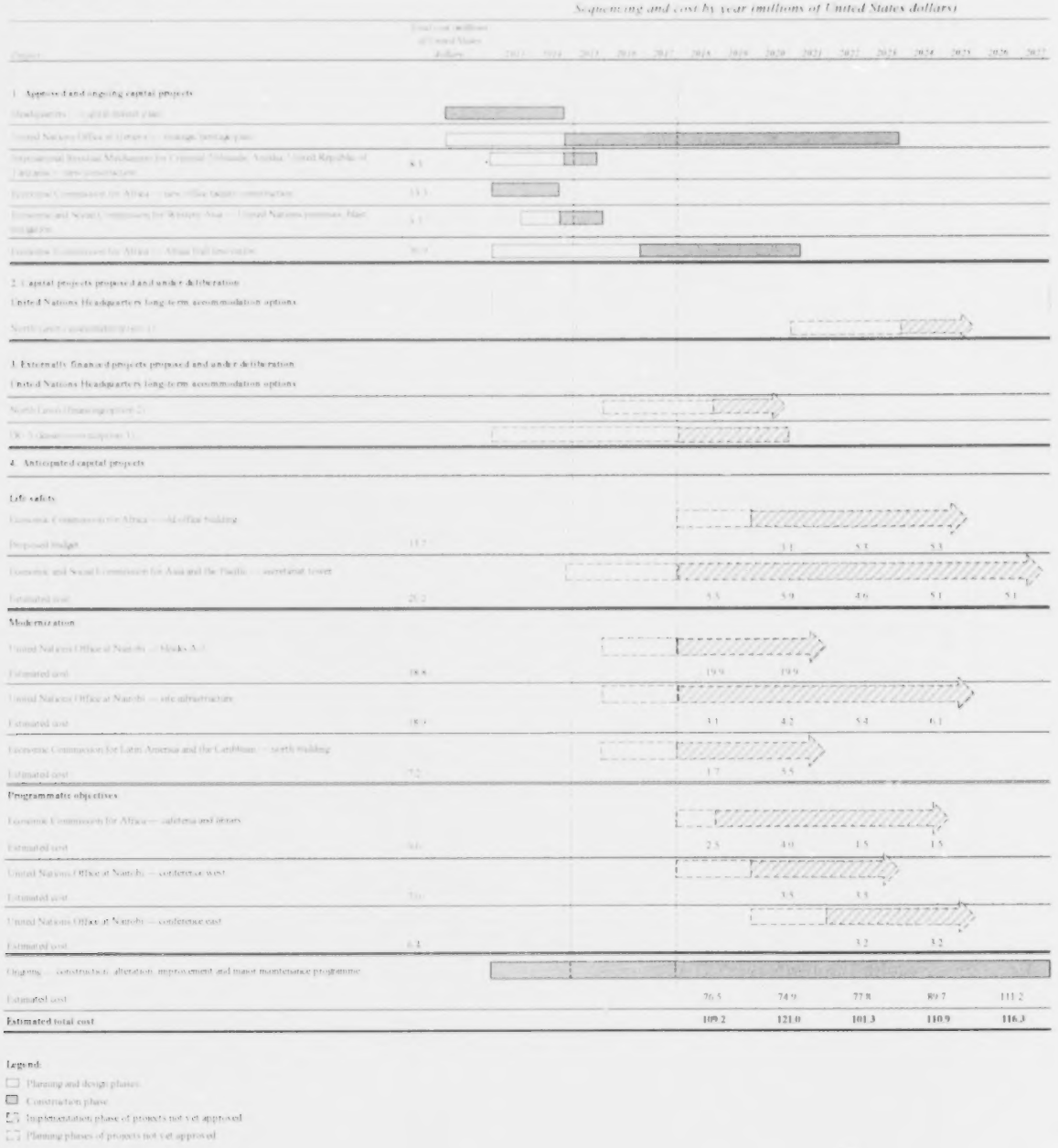
(i) Renovation of the library and cafeteria buildings at the Economic Commission for Africa;

(ii) Expansion of conference facilities at the United Nations Office at Nairobi;

62. A summary of approved and ongoing capital projects, other projects proposed and under deliberation to be managed internally or externally and the anticipated capital projects emanating from the review, including their respective preliminary estimated costs and schedules, is shown in figure I.

Figure I

Near-term capital expenditure projects and other projects
Projected timeline, 2013-2027



C. The case for future incremental recapitalization

63. Following the completion of the 20-year anticipated near-term capital expenditure and other projects as shown in the figure above, and once the facilities are upgraded or newly constructed (following completion of the capital master plan at Headquarters, the strategic capital review in Geneva and the new office facilities in Addis Ababa and Nairobi), an incremental recapitalization plan can be put into effect for the Organization based on the systematic life-cycle replacement methodology.

64. Using this rationale from a future capital budgeting perspective, the 50-year useful life of buildings implies that such buildings should be recapitalized at least once every 50 years. Effectively, this means that 1/50th of the gross replacement cost should be budgeted for each year for the purpose of recapitalization, hence the 2 per cent annual maintenance reinvestment rate considered in the previous report.[2]

65. It is anticipated that, provided that the function of a building is required beyond its useful life, as is the case for all of the buildings currently in use by the Organization, it will need to be recapitalized at least once prior to the end of its useful life. Ideally this recapitalization should occur incrementally over a period of time, but it may occur all at once in a single replacement project.

66. Based on the lessons learned from recent capital projects undertaken by the Organization, as noted in annex II, and based on the findings of phases 2 and 3 of the review, the Secretary-General recommends that the recapitalization of assets be implemented incrementally over a period time, for the following reasons:

(a) It extends the useful lives of assets, decreasing the need for major capital investments/replacements;

(b) It keeps the assets fit for purpose, and they will perform better over the duration of their useful life;

(c) It reduces the cost of keeping assets operational as compared with when the assets are allowed to run to failure and then replaced;

(d) It provides a better risk management strategy, as capital needs are identified before any catastrophic failure happens;

(e) It saves on additional/associated costs attributed to implementing large-scale projects, such as the costs of swing space, interruption to business continuity and the inherent risks of large-scale procurement/construction.

Example of asset recapitalization

67. In the following example, a building valued at $100 million has a useful life of 50 years. Whereas the value of the building depreciates on a straight-line basis at a rate of 2 per cent per year, the actual performance of the building follows a curve in which in the first half of the life of the building performance is maintained at a relatively high rate, while in the second half, performance declines sharply (figure 2). Figures 3 and 4 show two options for recapitalizing the buildings, either

[2] The maintenance reinvestment rate of a particular location might need to be higher than 2 per cent for the next few years because a number of buildings are reaching the end of their useful lives.

by letting the asset deteriorate to a failure point, requiring a larger one-time investment (figure 3), or maintaining an asset's performance and value by continually reinvesting in it starting in the first half of its useful life, which results in a lower overall cost (figure 4).

Figure 2
Asset performance over time

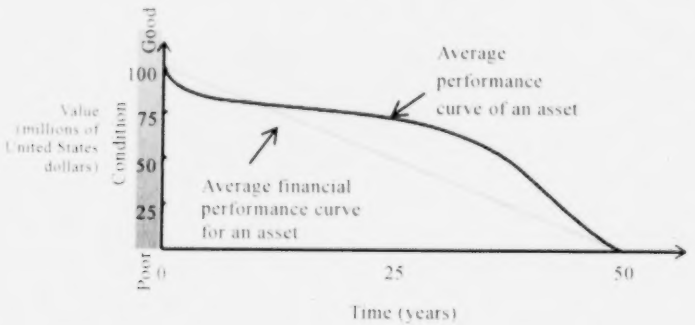


Figure 3
Option 1: recapitalization of an asset at the end of useful life (run-to-failure)

Total investment for this option: $150 million

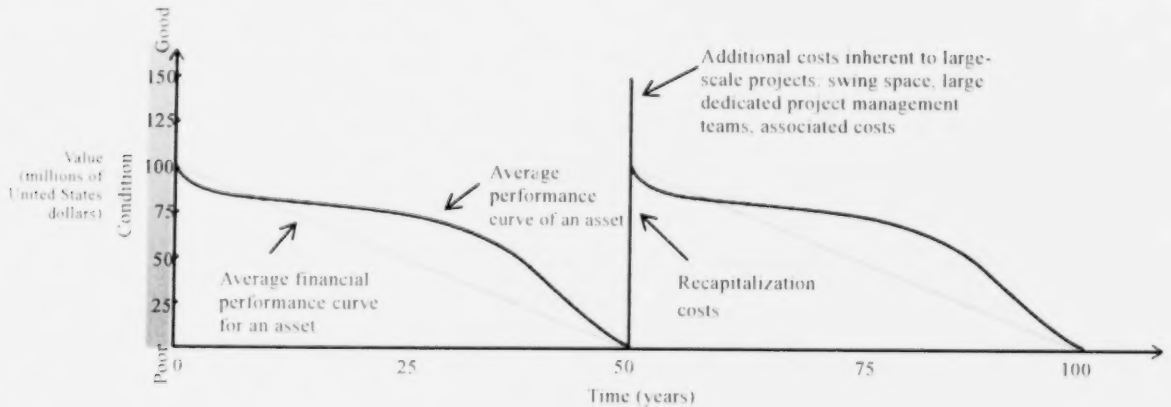
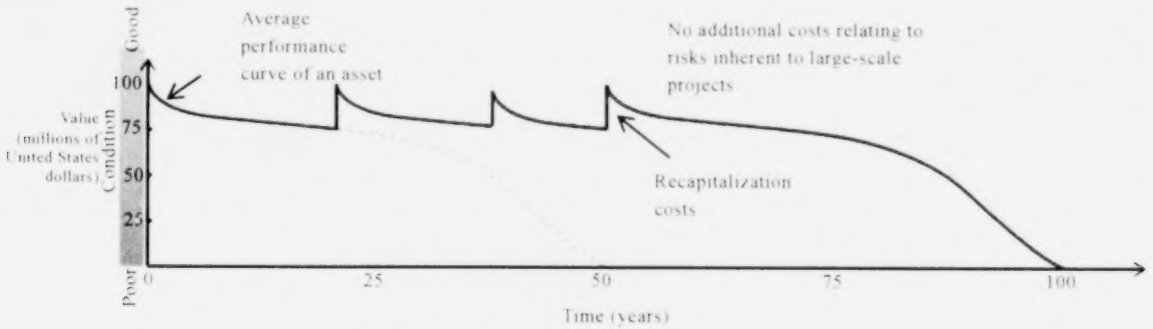


Figure 4
Option 2: incremental recapitalization of an asset during the first half of its useful life

Total investment for this option: $65 million



VI. Next steps

68. The next steps for the strategic capital review would include:

(a) Completion of the centralized database of projects and conduct of staff training at Headquarters and offices away from Headquarters and regional commissions in 2015;

(b) Establishment of a mechanism to ensure that the data is effectively rolled over into Umoja;

(c) Establishment of a mechanism to provide peer reviews and backstop the offices away from Headquarters and regional commissions in planning, estimating costs and implementing approved medium-sized projects emanating from the review;

(d) Continuation of the provision of technical guidance and support for ongoing medium-sized capital projects;

(e) Development of a monitoring tool for ongoing alterations and improvement and major maintenance projects undertaken under section 33 of the programme budget.

VII. Recommended actions to be taken by the General Assembly

69. **The General Assembly is recommended to:**

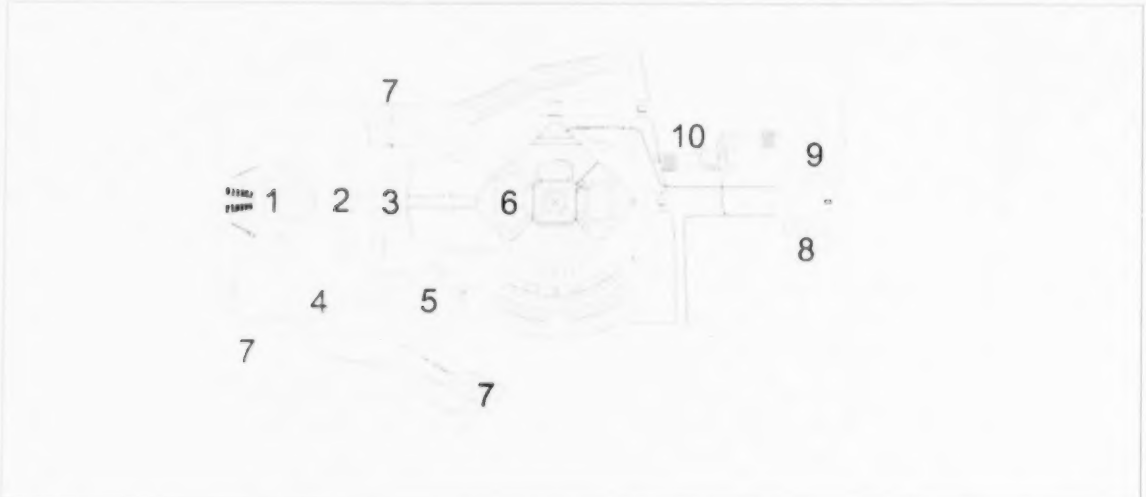
(a) **Take note of the report;**

(b) **Request the Secretary-General to report the General Assembly, at the first part of its resumed seventieth session, on the long-term capital maintenance programme (2018-2037), including detailed information for the preliminary planned projects and the related cost estimates.**

Annex I

Overview of the real estate portfolio of the United Nations Secretariat

A. Economic Commission for Africa



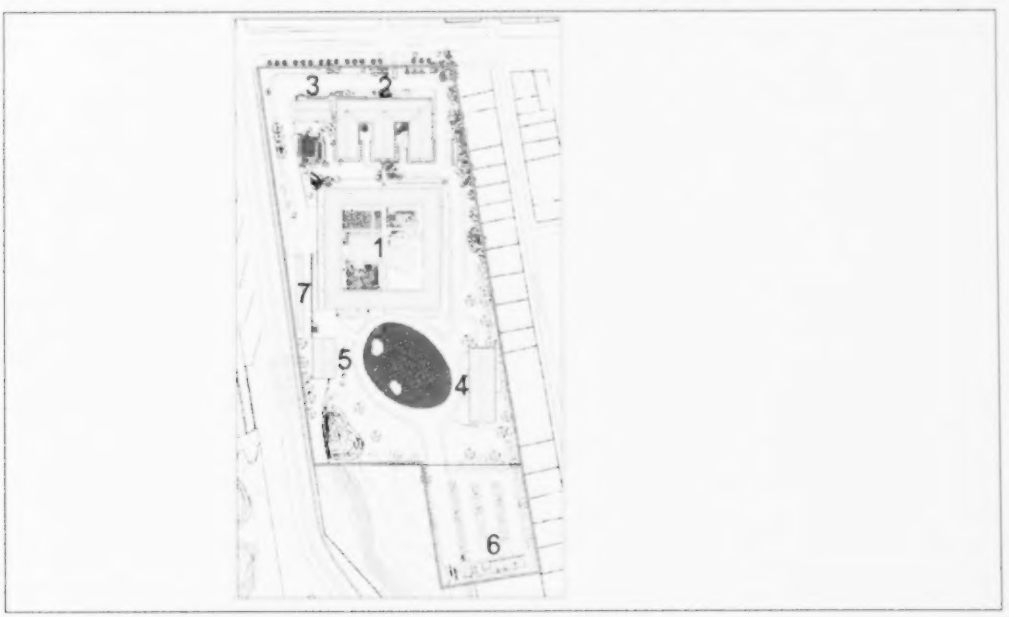
Asset type name	*Year of construction or major renovation*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
Building assets						
1 Africa Hall	1961	7	6 576	14 940 475	2 985 107	80
2 Old office building	1961	7	10 612	21 254 032	3 894 801	82
3 Extension office building	1976	13	20 895	40 283 262	13 958 151	65
4 Library building	1976	13	5 664	7 723 487	2 414 362	69
5 Cafeteria building	1976	13	5 270	6 598 514	2 062 695	69
6 United Nations Conference Centre	1996	33	44 488	164 662 100	71 397 487	57
7 Green House	2004	13	274	353 000	216 389	39
8 Delegate registration building	2005	33	714	661 500	431 100	35
9 Mail registry building	2006	33	720	667 001	460 498	31
10 New office facility	2014	50	13 861	15 322 500	15 322 500	–
Subtotal, building assets	–	–	**109 074**	**272 465 871**	**113 143 090**	**58**
Infrastructure assets						
Energy	–	–	–	5 607 902	3 199 536	43
Protection	–	–	–	15 038 127	9 189 563	39
Transport	–	–	–	8 376 938	4 989 150	40

Asset type name	*Year of construction or major renovation*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
Water management	–	–	–	399 840	327 865	18
Landscaping	–	–	–	11 424 000	7 996 800	30
Subtotal, infrastructure assets	–	–	–	**40 846 807**	**25 702 914**	**37**
Total	–	–	–	**313 312 678**	**138 846 004**	**56**

Leased buildings

Asset type name	*Type of lease*	*Lease start date*	*Gross internal area (square metres)*
Subregional offices			
Northern Africa: Rabat	Donation/right-to-use	15 February 2009	1 000.00
West Africa: Niamey	Donation/right-to-use	20 November 1963	801.00
Central Africa: Yaoundé	Donation/right-to-use	8 May 1996	194.92
East Africa: Kigali	Donation/right-to-use	21 September 1998	1 189.00
Southern Africa: Lusaka	Donation/right-to-use	1 November 1977	282.00

B. Economic Commission for Latin America and the Caribbean



Asset type name	*Year of construction*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
Building assets						
1 Main building	1966	25	14 650	35 499 199	9 911 550	72
2 North building	1989	25	2 668	3 645 255	2 168 534	41
3 Printing building	1989	25	970	2 030 723	809 036	60
4 Clades Building	1975	25	1 486	3 095 537	719 344	77
5 Auditorium	1983	25	644	1 093 185	136 950	87
6 Security building	2007	25	499	1 045 996	843 096	19
7 Ancillary building	1992	25	258	537 841	196 217	64
8 Cafeteria	2013	40	687	1 120 653	1 144 486	n/a
9 Parking garage	2004	40	3 553	1 178 242	910 352	23
Subtotal, building assets	–	–	**25 415**	**49 246 631**	**16 839 565**	**66**
Infrastructure assets						
Energy	1980	–	–	2 085 263	743 743	64
Protection	1978	–	–	472 498	76 424	84
Waste Management	1969	–	–	1 703 697	97 963	94
Landscaping	1972	–	–	723 053	–	100
Subtotal, infrastructure assets	–	–	–	**4 984 511**	**918 130**	**82**
Total	–	–	–	**54 231 142**	**17 757 695**	**67**

Leased buildings

Asset type name	*Type of lease*	*Lease start date*	*Gross internal area (square metres)*
Subregional offices			
Mexico: Mexico City	Commercial	1 June 2011	1 995.00
Caribbean: Port of Spain	Commercial	11 April 2011	1 437.00
Bogota	Commercial	1 December 2006	215.98
Brasilia	Donation/right-to-use	1 April 2012	689.77
Buenos Aires	Commercial	1 December 2009	487.00
Montevideo	Commercial	1 January 2008	297.00
Washington, D.C.	Commercial	14 December 2011	372.00

C. Economic and Social Commission for Asia and the Pacific

Asset type name	*Year of construction*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
Building assets						
1 Secretariat building	1975	20	29 532	42 847 447	25 546 624	40
2 United Nations Conference Centre	1993	20	50 730	73 603 244	36 119 622	51
3 Service building	1975	20	19 727	23 749 796	13 640 495	43
Total	–	–	**99 989**	**140 200 487**	**75 306 741**	**46**

Leased buildings

Asset type name	*Type of lease*	*Lease start date*	*Gross internal area (square metres)*
Subregional offices — building assets			
Pacific: Suva	Commercial	1 June 2009	384.12
East and North-East Asia: Incheon, Republic of Korea	Donation/right-to-use	17 May 2010	1 400.00
North and Central Asia: Almaty, Kazakhstan	Donation/right-to-use	1 September 2012	133.00
South and South-West Asia: New Delhi	Donation/right-to-use	1 August 2011	2 890.00
Asian and Pacific Centre for Agricultural Engineering and Machinery: Beijing	Donation/right-to-use	1 October 2003	1 370.71
Asian and Pacific Training Centre for Information and Communication Technology for Development: Incheon, Republic of Korea	Donation/right-to-use	16 June 2006	1 600.00
Centre for the Alleviation of Poverty through Sustainable Agriculture: Bogor, Indonesia	Donation/right-to-use	1 January 1981	7 822.00
Asia Pacific Centre for Transfer of Technology: New Delhi	Donation/right-to-use	1 August 2011	2 890.00
Statistical Institute for Asia and the Pacific: Tokyo	Donation/right-to-use	1 December 1999	1 480.61

D. Economic and Social Commission for Western Asia

Asset type name	*Year of construction*	*Remaining useful life (years)*	*Gross External area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
Infrastructure assets						
Protection	2013	11	—	624 381	586 124	6
Total	–	–	–	**624 381**	**586 124**	**6**

Leased buildings

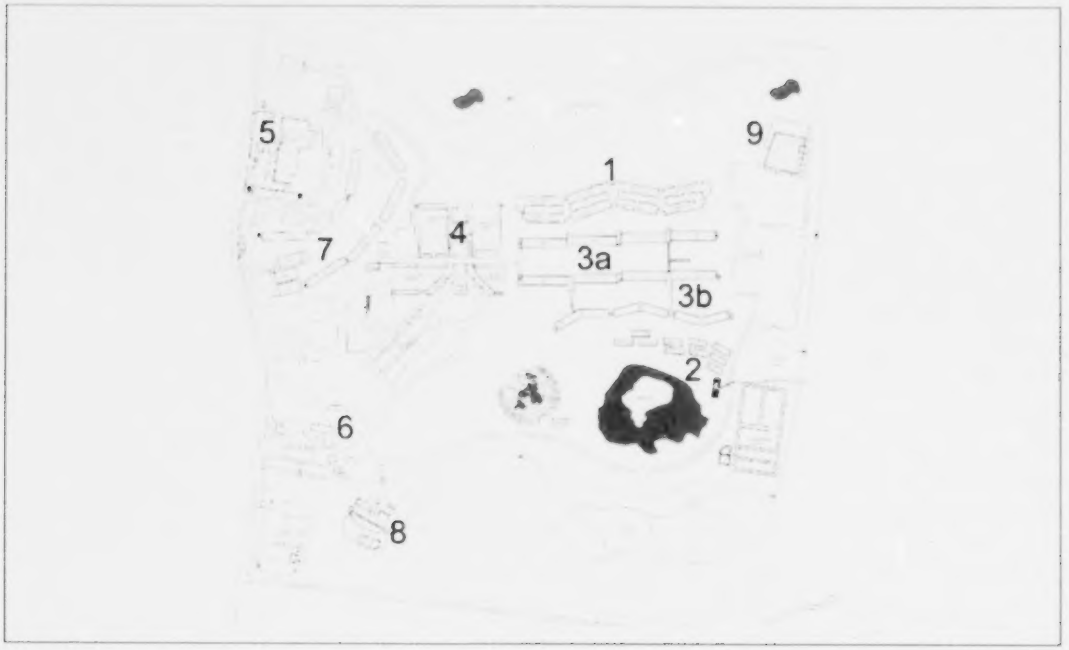
Asset type name	*Type of lease*	*Lease start date*	*Gross internal area (square metres)*
Economic and Social Commission for Western Asia headquarters and various agencies	Donation/right-to-use	15 September 1997	43 554.00
Economic and Social Commission for Western Asia Technology Centre for Development: Amman	Donation/right-to-use	23 December 2010	216.00

E. United Nations Office at Geneva

Asset type name	*Year of construction*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
Building assets						
I. Palais des Nations						
1 Bâtiment A	1937	4	59 373.50	263 112 000	19 969 147	92
2 Bâtiment B	1937	2	25 164.66	99 825 000	3 148 402	97
3 Bâtiment C	1937	22	20 331.54	80 921 000	36 280 417	55
4 Bâtiment D	1952	3	4 913.03	20 177 000	1 229 259	94
5 Bâtiment S	1937	15	26 609.63	104 040 000	32 603 010	69
II. Building E						
6 Bâtiment E — below the 4th floor	1973	12	100 821.45	222 527 000	51 511 170	77
7 Bâtiment E — 4th floor and above	1973	4	100 821.45	75 068 000	6 270 322	92
8 Bâtiment E — underground parking	1973	–	2 853.00	12 715 000	–	100
III. Annexes and villas						
9 Passerelle	1973	6	323.00	2 514 000	295 664	88
10 Villa Le Bocage	1823	8	2 408.52	7 330 000	1 186 287	84
11 Pavillon I Le Bocage	1964	17	587.00	3 083 000	1 027 518	67
12 Pavillon II Le Bocage	1964	17	630.00	3 778 000	1 259 151	67
13 Villa La Pelouse	1853	11	1 144.42	4 795 000	1 036 911	78

Asset type name	*Year of construction*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
14 Dependance La Pelouse	1820	16	1 410.59	4 927 000	1 534 125	69
15 Villa La Fenêtre	1820	34	774.00	3 685 000	2 504 413	32
16 Garage La Fenêtre	1820	12	111.00	295 000	72 596	75
17 Centre courrier	2008	39	2 952.50	11 554 000	8 940 679	23
18 Garage à vélos	1952	48	558.06	436 000	422 218	3
19 Chalet Montbovon	1620	–	49.00	365 000	–	100
20 La Remise	1820	–	331.00	2 406 000	–	100
21 La boîte à thé	1820	–	33.00	142 000	–	100
22 L'écurie	1820	–	134.00	1 181 000	–	100
23 L'orangerie	1834	7	127.00	1 167 000	165 025	86
24 La serre	2001	24	161.00	224 000	107 520	52
25 Villa Les Feuillantines	1820	30	889.23	3 461 000	2 054 131	41
26 Dépendance Les Feuillantines	1820	–	126.90	346 000	–	100
27 Restaurant Plage de L'ONU	1937	36	196.00	935 000	681 412	27
28 Vestiaires Plage de L'ONU	1937	36	65.56	234 000	169 351	28
29 Panneaux solaires toiture	2013	48	–	560 000	537 600	4
30 Prise d'air bâtiment 307	1937	–	–	132 000	–	100
IV. Gates and security buildings						
31 Chemin de Fer	2006	39	29.43	1 008 000	778 718	23
32 Pregny	2006	35	1 031.85	11 191 000	7 796 965	30
33 Nations	2006	39	29.62	1 798 000	1 389 023	23
Subtotal, building assets	–	–	**354 990.94**	**945 932 000**	**182 371 034**	**81**
Infrastructure assets						
1 Car parks	–	5	–	4 600 750	460 075	90
2 Roads	–	5	–	3 051 818	305 182	90
3 Pathways	–	6	–	382 370	42 486	89
4 Perimeter fencing	–	28	–	474 320	260 876	45
5 Intruder detection system	–	25	–	6 885 207	3 442 603	50
Subtotal, infrastructure assets	–	–	–	**15 394 465**	**4 511 222**	**71**
Total	–	–	–	**961 326 465**	**186 882 256**	**81**

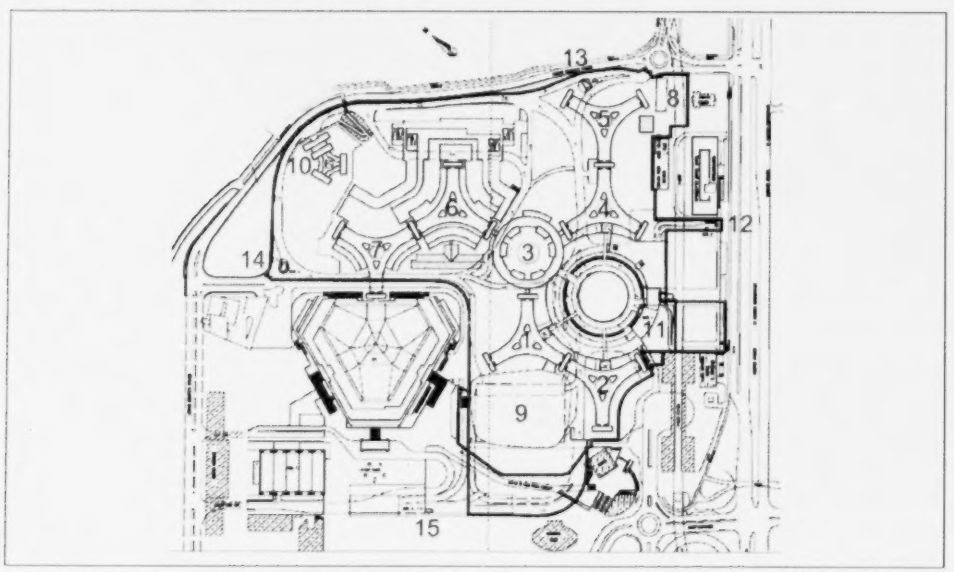
F. United Nations Office at Nairobi



Asset type name	*Year of construction*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
Building assets						
1 New office facility	2010	28	25 360	28 814 151	25 083 135	13
2 Prefabricated office buildings	2009	20	3 672	1 698 571	1 213 265	29
3a Office blocks M, N, P, Q, R, S and T	1981	10	15 944	12 698 838	7 164 770	44
3b Office blocks U, V, W and X	1991	15	11 032	11 004 261	5 904 885	46
4 Central areas						
Roof-top offices	2010	19	547	370 657	305 481	18
Library and publication building	1981	8	4 592	4 072 121	2 104 167	48
Conference west	1981	13	5 005	4 760 009	2 468 709	48
Conference east	1981	15	4 779	6 703 000	3 668 699	45
Conferences 9-14	2006	17	837	729 297	403 104	45
Main plaza; concourse, mall and delegates entrance; catering, generator and refuse building	1981	11	14 600	8 640 188	4 378 068	49
United Nations Federal Credit Union, United Nations Sacco Society and Joint Medical Service stores	2005	21	573	416 540	276 002	34
5 Central materials management facility	2006	22	2 815	2 625 780	1 860 475	29

Asset type name	*Year of construction*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
6 Gate houses and visitors pavilion	2007	22	953	1 736 193	1 364 086	21
7 Office blocks A, B, C, D, E, F, G, H, I and J	1975	10	12 137	10 067 451	1 847 884	82
8 United Nations Recreation Centre Building	2004	24	2 674	2 837 044	2 365 136	17
9 Multi-storey car park	2010	24	6 925	2 956 110	2 672 479	10
Subtotal, building assets	–	–	**112 445**	**100 130 211**	**63 080 345**	**37**
Infrastructure assets						
Telecommunication	–	20	–	282 710	226 168	20
Energy	–	14	–	32 137 359	17 795 464	45
Protection	–	19	–	1 104 730	1 049 493	5
Transport	–	12	–	6 779 855	2 826 114	58
Waste management	–	30	–	5 287 025	2 599 697	51
Water management	–	23	–	3 286 503	1 903 929	42
Recreation	–	6	–	943 693	357 682	62
Landscaping	–	9	–	2 356 449	1 153 170	51
Subtotal, infrastructure assets	–	–	–	**52 178 324**	**27 911 717**	**47**
Total	–	–	–	**152 308 535**	**90 992 062**	**40**

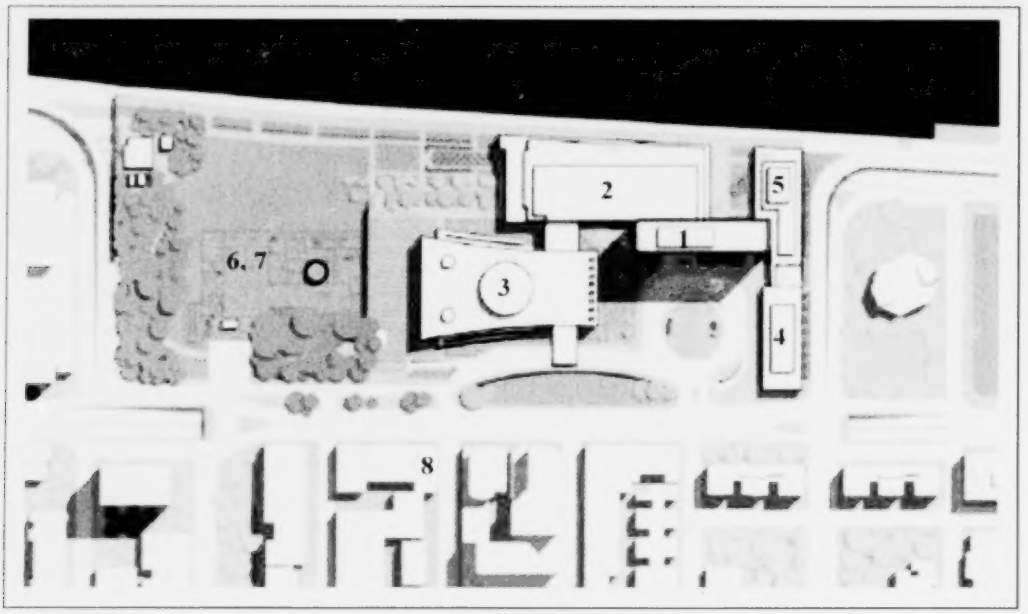
G. United Nations Office at Vienna



Asset type name	*Year of construction*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
Building assets						
1 Building A	1979	66	67 489.45	175 634 585	61 547 015	65
2 Building B	1979	66	28 915.55	74 405 072	21 700 299	71
3 Building C	1979	66	48 282.87	66 425 031	4 579 522	93
4 Building D	1979	66	54 413.36	149 226 908	55 672 563	63
5 Building E	1979	66	37 970.85	92 574 929	27 890 674	70
6 Building F	1979	66	74 478.73	176 866 670	80 022 321	55
7 Building G	1979	66	32 578.70	98 755 746	46 048 888	53
8 Building J	1979	–	819.12	–	–	–
9 Building M (Conference Centre)	2009	99	30 135.30	65 379 826	63 272 416	3
10 Building K (Child Care Centre)	2001	90	1 455.68	2 875 773	1 596 592	44
11 Security gate 1	1979	99	686.06	2 086 590	2 018 686	3
12 Security gate 2	1979	66	19.16	31 040	1 152	96
13 Security gate 3	1979	66	63.68	103 184	3 828	96
14 Security gate 4	1979	66	59.22	112 742	4 183	96
15 Security gate 5	1979	66	44.93	72 800	2 701	96
16 Parking below central areas	1979	66	1 800.00	32 691 220	3 970 827	88
17 Parking below building M	2010	99	n/a	18 014 757	17 586 092	2
Subtotal, building assets	–	–	**379 212.66**	**955 256 873**	**385 917 759**	**60**
Infrastructure assets						
Transport	–	–	–	15 769 519	1 735 252	89
Landscaping	–	–	–	5 406 559	499 527	91
Subtotal, infrastructure assets	–	–	–	**21 176 078**	**2 234 779**	**90**
Total	–	–	–	**976 432 951**	**388 152 538**	**60**

Note: As stated in A/68/6 (Sect. 33), alterations and improvements at Vienna are governed by the agreement between four Vienna International Centre-based organizations. The United Nations Office at Vienna contributions are based on its current share of 22.670 per cent. For the purposes of the present report, the direct United Nations Office at Vienna value is considered to be $221,357,350 gross replacement cost and $87,994,180 depreciated replacement cost, which is the corresponding 22.670 per cent of the recorded Vienna International Centre value.

H. United Nations Headquarters



Asset type name	*Year of construction*	*Remaining useful life (years)*	*Gross external area (square metres)*	*Gross replacement cost (United States dollars)*	*Depreciated replacement cost (United States dollars)*	*Depreciation in value (percentage)*
Building assets						
1 Secretariat Building	1950	49	114 473	787 404 525	758 892 583	4
2 Conference Building	1950	50	42 703	408 460 282	395 019 874	3
3 General Assembly Building	1950	50	40 066	81 652 150	77 974 119	5
4 Dag Hammarskjold Library	1967	17	11 013	99 498 765	33 889 087	66
5 South Annex Building	1982	19	3 650	36 592 119	13 725 327	62
6 Temporary North Lawn Conference Building	2009	3	24 651	173 494 249	74 354 678	57
7 North Lawn Building	1981	20	10 297	111 244 156	77 625 122	30
8 UNITAR Building	1946	25	5 143	36 839 428	18 461 535	50
9 Sutton Place (Secretary-General's residence)	1927	20	1 304	13 235 551	12 002 090	9
Subtotal, building assets	–	–	**253 300**	**1 748 421 225**	**1 461 944 415**	**16**
Infrastructure assets						
Protection	2006	17	–	37 712 488	25 644 492	32
Energy	2008	20	–	15 107 501	11 481 962	24
Subtotal, infrastructure assets	–	–	–	**52 819 989**	**37 126 454**	**30**
Total	–	–	–	**1 801 241 214**	**1 499 070 869**	**17**

Leased buildings

Asset type name	*Type of lease*	*Current lease start date*	*Gross internal area (square metres)*
Building assets			
DC-1 Building	Commercial	1 April 2008	18 261.57
DC-2 Building	Commercial	1 April 2008	28 991.68
FF Building	Commercial	1 May 2010	12 848.58
Albano Building	Commercial	1 February 2008	17 378.44
Innovation Building	Commercial	10 July 2008	12 319.12
Daily News Building	Commercial	1 April 2007	2 962.77
Alcoa Building	Commercial	1 August 2010	2 865.59
Court Square Building, Long Island City, New York	Commercial	14 February 2008	7 346.68
3 Corporate Place, Piscataway, New Jersey	Commercial	30 June 2009	368.73
ARMS Warehouse, Long Island City, New York	Commercial	1 January 2010	4 683.52
JFK International Airport Cargo Building, Jamaica, New York	Commercial	1 January 2014	16.72

Annex II

Lessons learned from capital projects recently undertaken by the Organization

Governance

1. An effective organizational and management structure, with guidance and support from Headquarters (Office of Central Support Services) should be established to facilitate the successful planning and execution of the project.

2. An accountable and efficient governance structure must be developed and implemented as part of the initial project structure. The governance structure must be responsive to the fast pace and focus of the project. It should establish clear lines of authority, defining the purpose and role of each governance component. The governance structure should be adjusted, as appropriate, during the project to reflect changes in the project's risk profile as it evolves through its various stages.

3. Roles and responsibilities for United Nations project staff and the project management firm should be clearly defined. Specific, project-oriented assignments should be made, in addition to cross-cutting assignments. Assignments should be made based on availability of staff and individual skills. Assignments should be updated regularly as the project progresses and as staffing changes.

4. Clear roles and responsibilities for dedicated project staff and existing facilities management staff should be established early in the planning phase. A dedicated project management team should be in place until the end of the defect liability period (and not only until the end of the construction period). The project team should maintain a certain level of autonomy, while being able to work seamlessly with existing facilities management staff as required, including soliciting information regarding existing conditions and management practices. Existing facilities management staff should be heavily involved in establishing architectural and engineering design standards.

5. Substantial participation by all other parts of the Secretariat (operational partners, contracting experts and focal points) is required. Early involvement of United Nations operational partners (United Nations departmental focal points, including focal points for security, information technology, conference services, public information, etc.) is required to define/confirm project objectives and to establish project design standards. The stakeholders should be informed of their responsibilities towards the project in terms of budget and schedule performance.

6. A working group comprising all stakeholders at the local level should be established, and the composition of the working group should be maintained (i.e., the same personnel) to the extent possible throughout all phases of the project.

7. The project team, including internal management and external architectural and engineering firms, should have the proper balance of staff, with both international and local experience. Design documents should accurately reflect applicable international best practices and standards, in addition to local codes, and should also take into account local construction techniques and practices.

8. Effective governance over the project is required at the project planning phase so that senior management can be assured that cost and progress forecasts are

accurate. Senior management should be supported by expert advice that is independent of the project team. From the planning stages, it is important that the project be managed with clear lines of supervision and accountability, which might involve establishing a steering committee. As the project progresses past the planning and design phases into construction, this arrangement might be re-evaluated.

9. For large-scale projects, a steering committee and/or advisory committee, with clearly defined roles and responsibilities, should be established as early in the implementation planning phase as possible. The committees will be most effective in the planning stages of the project, and less so during the implementation phase.

10. Large projects require the active management of human resources and the establishment of human resources policies that allow the team to retain trained staff. This requires a human resources strategy for successful succession planning that allows the Organization to efficiently absorb highly trained staff as the project comes to an end.

11. Large projects require appropriate controls that can clearly demonstrate to the General Assembly that the reported cost forecasts are reliable.

12. The office structure for the project should be agreed upon and budgeted and the core leadership and support should be in place early. This is especially important when it comes to the identification of the project's senior leadership and administration and the establishment of a communications mechanism, project finance and budget functions, and design and construction teams. The senior leadership team should be composed of individuals vested with executive authority appropriate for the decisions that need to be taken.

13. For large-scale projects, changes to key personnel of the project team, both internal and external, should be accounted for in project scheduling, since losses in production may ensue during turnover periods.

14. All decisions requiring approval, particularly those needing input by project stakeholders, should be identified early in the planning process in order to ensure that decisions can be made within an appropriate timeframe and that they do not negatively impact project execution.

15. Continuous engagement and leadership of executive-level management of the lead office is essential.

16. The risk manager and design peer reviewers should report directly to the United Nations.

Contract

17. The preferred overall contract structure should be established early in the implementation planning process. Consideration of available design and construction contracting methods should be reviewed, in particular those that are most prevalent in the region. Defining these methods will likely inform the implementation plan.

18. Standard United Nations construction contracts should contain a mechanism for referencing local forms of contract, as appropriate.

19. The most appropriate contractual mechanism for design and construction must be determined early in the project planning stages, with adequate knowledge of the

local market. In particular, a determination should be made of whether a lump sum or built quantities contract is most appropriate, taking into account local skills in the field of quantity surveying.

20. For construction contracts, payment terms for the importation of materials must be determined prior to contract award; in most cases, a provision for payment after transfer of ownership but prior to installation is appropriate and even necessary.

Risk management

21. The risk of programme variances, which can have an impact on the schedule and cost during project evolution, should be taken into account, particularly in the case of projects of long duration.

22. Project risks should be assessed using qualitative and quantitative methodologies and actively managed through the assignment of ownership of risks and response measures to line managers. Control measures should be regularly adjusted to reflect the progress made in a project. Judicious use of the risk register is recommended.

Budget

23. The budget should include a provision for contingency in an amount appropriate to cover reasonable project risks, which would vary depending on the project stage. Contingency should cover unforeseen site conditions, construction escalation and other conditions outside of the direct control of the organization.

24. A construction project budget includes provisions for contingency, cost escalation and the construction manager's (general contractor's) and designers' fees, which are items relating to capital expenditure and are not typically found in an operating budget such as the programme budget of the United Nations. It is important that such elements and their usage be clearly defined at the project planning phase. Once determined, they should be consistently treated and reported by the Organization throughout the project life cycle as established at the scope and budget formulation stage.

25. The associated costs of interior fit-out and the logistics involved in moving to the new building, including the coordination of information technology equipment and furniture, should be estimated and included in the budget, as this area involves significant management staffing and other activities that require resources.

26. The associated costs, both direct and indirect, should be identified and quantified at the start of the project so that a comprehensive budget can be determined and presented to Member States. The responsibility for managing those costs should be established at a single office.

27. Large construction projects generate change orders that require active management and negotiation. The establishment of an appropriate level of delegation of authority helps to avoid delays in processing such change orders.

Planning

28. A detailed project manual should be created as early in the implementation planning phase as possible.

29. Large, multi-year projects should create subprojects and multiple architectural firms should be appointed to mitigate the risks to project completion in the case of a consultant failure or litigation.

30. A programme management consultant should be engaged to provide estimating services that are independent of the construction manager for cost controls and additional industry expertise in project management. Dedicated personnel should be assigned to manage each subproject. Unlike the system of separate architects for separate subprojects, engineering is best managed as a coordinated programme responding to a single vision and coordinated among the various partners and contractors.

31. From the pre-planning stages, a formal sign-off by senior managers of departments concerning what will be delivered is critical to limit scope changes in user requirements while the construction project is in progress.

32. Sufficient time should be planned for project consultants and industry experts (architects, engineers and quantity surveyors) to prepare contract and construction documents and cost estimates.

33. Early in the formulation of the project, attention and support from the senior management of the Organization is critical. The goals and objectives, the budget and schedule, the risks and exposures and the limits of work that will be achieved should be clearly communicated, not only in reports of the Secretary-General, but also in briefings and online communication. It is equally important to establish the scope of work that will not be achieved in the project.

34. End users should be identified early in the project planning phase, with requirements identified and managed throughout the process. A planning committee to serve as a forum for communication with end users is highly desirable.

35. In terms of an appropriately sized dedicated project management team and dedicated liaison specialists, sufficient dedicated resources should be allocated early enough in the process in relation to the size and magnitude of the project in order to keep workload and responsibilities manageable.

36. The project should deliver the broad objectives determined by the Member States, such as energy usage goals, the rationalization of space utilization and safety, on a campus-wide basis, instead of requiring every subproject to meet the goals and standards. A core office for the project team is needed, with dedicated staff assigned to project-wide responsibilities.

37. For a project to renovate existing buildings, a thorough programme of investigation and assessment of the facilities is required early in the process. This will mitigate costly surprises later.

38. The congress systems with broadcast, webcast, information technology and wireless communication should be fully integrated.

Design

39. To be effective, the project structure should include specialist architects and a single construction manager who would coordinate all elements of project implementation. The United Nations should be the decision maker for the overall

programme and design, which allows the Organization to retain direct control over the project costs and schedule.

40. Design objectives and functional requirements should be clearly defined from the outset of a project, or at least during the design phase, given that changes made during the construction period pose a risk to the completion schedule and cost of the project.

41. A master architect should be employed to establish design standards and to oversee and coordinate the work of the architects, designers, preservationists and various other subcontractors.

42. In addition to mechanical, electrical and plumbing engineers, a low-voltage engineer should be hired/assigned early in the design process to coordinate design and integration issues of the following low-voltage systems: audiovisual, congress/simultaneous interpretation equipment and security systems. The engineer would be primarily responsible for coordinating with information technology, conference and public information services.

Construction

43. Managing and disposing of United Nations assets during the construction phase of a project must be planned well ahead of time in order to avoid choking the project on its own debris. In renovations, tons of debris must be removed expeditiously.

44. The construction manager should select financially stable subcontractors through a strong pre-qualification process. The liquidity and financial stability of major contractors should be carefully monitored to manage the project's exposure to the risk of subcontractor insolvency.

45. For large-scale projects, a robust process for vetting subcontractors should be developed prior to contract award.

46. The contractor should be required to identify, track and report on high-risk items, such as items that can only be obtained from a single source or for which supply is risky, limited, unpredictable or subject to control by local or other governments, in order to alert the project team and make alternative or contingency arrangements in time to avoid an adverse impact on the project timeline.

Cost control

47. A robust design review process should be established to avoid, as much as possible, out-of-sequence design changes.

48. The project should be regularly monitored against the established project objectives to avoid "scope creep".

49. Scope documents should be created and agreed to prior to commencement of design services. Any change in scope after commencement of design services should be approved according to established policy, including at the senior level.

50. All construction costs must be known and validated prior to entering into any construction contract agreement.

51. All associated and support costs must be identified at the outset of a project and should be included in the overall project cost plan so that they can be managed within the project.

52. Once the project scope and cost plan are established, any potential deviation must be reassessed and reported to the General Assembly.

53. Budget control and reporting mechanisms must be developed early in the planning process and must be applied consistently throughout the project.

54. Investing additional effort and time in the preparation of the construction documents is recommended as a way to control costs and save time over the long term. It is commonplace for projects to start later than originally expected, creating intense pressure to start the project. A fast-track methodology is often employed by bidding individual subprojects while the construction documents for the remainder of the projects are less than 100 per cent complete, given that the bidding, award and mobilization process will allow some time for amendments and changes. This methodology should be employed only when there is a clear understanding that the risk of change orders is more than balanced by the benefits of saving construction time.

Procurement

55. All the appropriate procedures and objectives should be consolidated into a project manual, so that all contractors adhere to the procurement guidelines and principles of the Organization.

56. For highly specialized types of work (e.g., certain restoration work), an expeditious method of implementing sole-source selection is needed. This requirement must be fully explored, in advance, with the Procurement Division and the Office of Legal Affairs.

57. Scope flexibility within individual contracts is needed throughout the project. This can be obtained in a timely manner in a transparent procurement process by organizing contracts with options, alternates, unit prices and allowances so that the Organization can quickly respond to unexpected situations.

General and administrative issues

58. A calendar of regular team meetings should be kept, shared with all and centrally managed. All key decision makers should be present at team meetings.

59. In addition to team meetings, regular coordination meetings and presentations with all stakeholders and United Nations operational partners (security, information technology, conference services, public information, etc.) should be held to solicit feedback and obtain agreement.

60. Document management procedures should be established, including an information exchange platform.

61. An intranet portal and external website should be established to communicate with all internal and external stakeholders.

62. Ongoing dialogue between Headquarters and offices away from Headquarters should be maintained to provide support for projects.

Host country coordination

63. A clear agreement/guidelines should be established with the host country authorities concerning how to solicit feedback from knowledgeable building and construction officials without relinquishing the legal status of the United Nations.

64. Location constraints and related challenges, particularly related to construction material importation, may require a longer project duration than expected. Material importation lead times, with host country processes factored in, must be identified well in advance in order to accurately project and manage the overall schedule.

65. Support of the host country in all aspects of the project, particularly with regard to permitting and material importation, is essential.

Others

66. Health and safety objectives should be defined in tangible terms related to specific codes, such as accessibility and building codes, before the scope and budget are developed. The construction manager must have the health and safety of the staff and delegates of the Organization, and his or her own personnel, as a primary goal throughout the construction process.